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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,911	03/08/2004	James R. Hendershot	HD76/01	1807

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EXAMINER

AHN, SAM K

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/795,911

Applicant(s)

HENDERSHOT, JAMES R.

Examiner

Sam K. Ahn

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-11 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the *"error detection and correction means"*, *"symbol decision means"* and *"digital and analog hardware of the transmitter and the receiver"* as claimed, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1-11 are objected to because of the following informalities:

In claims 1-11, describe that the "m" is an integer.

In claim 1, line 16, "the PN" should be "a PN", line 35, "quieting" should be "quieting effect", line 40, recites "the received data" which was not previously recited, hence the claim should recite that the signal receiver receives data.

In claim 2, line 16, "the PN" should be "a PN", line 35, "quieting" should be "quieting effect", line 40, recites "the received data" which was not previously recited, hence the claim should recite that the signal receiver receives data.

In claim 3, line 10, "the PN" should be "a PN", line 23, recites "the received data" which was not previously recited, hence the claim should recite that the signal receiver receives data.

In claim 5, line 6, "(m);" should be "m."

In claim 8, line 4, "the receiver having a" should be "the signal receiver having the", line 5, "those phase" should be "phase".

In claim 9, line 4, "the receiver having a" should be "the signal receiver having the", line 5, "those phase" should be "phase".

In claim 10, line 2, "the transmitter" should be "the signal transmitter", and in lines 5-6 "frequency, with the receiver also having detection means" should be "frequency".

In claim 11, line 2, "the transmitter" should be "the signal transmitter", and in lines 5-6 "frequency, with the receiver also having detection means" should be "frequency".

Claims 4,6 and 7 directly depend on claim 1,2 or 3. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1,2 and 6-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The independent claims 1 and 2 recite common elements and it appears that the only main difference is that the transmitter and the receiver claimed are implemented in an analog hardware and a digital hardware, respectively. The specification merely explains that the transmitter and the receiver may operate in the analog hardware and the digital hardware without further explaining what components are included in the hardware to be considered as the analog hardware or the digital hardware. The m-ary variable shift keying system

producing its signal is considered as a digital signal, hence one skilled in the art would recognize that the system operates in a digital hardware. However, the applicant claims separate set of claims 1, 6, 8 and 10 operating in an analog hardware and claims 2,7,9 and 11 corresponding to operation in a digital hardware. Thus, the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art of how and what components are operated and considered in the transmitter and the receiver to be operating in its respective analog or digital hardware.

Claims 6-11 directly depend on claim 1 or 2.

Allowable Subject Matter

4. Claims 3-5 would be allowable if rewritten or amended to overcome the claim objections, set forth in this Office action.
5. The following is a statement of reasons for the indication of allowable subject matter: present application discloses a system comprising a transmitter and a receiver employing frequency hopping signal scheme, and transmitting with PN code, and a receiver receiving the transmitted signal. However, prior art does not explicitly teach the receiver further comprising the combined limitation of m number of channels receiver coupled to detection means, symbol decision means and error detection and correction means, as claimed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dekker US 6,049,562 teaches a frequency hopping system with plurality of signal branches for signal reception.

Nuutinen et al. US 7,016,439 teaches a receiver with plurality of signal paths comprising splitter, buffer and signal averager for decoding of signals.

Linder et al. US 6,693,980 B1 teaches a wideband fast hopping receiver comprising direct digital synthesis processing I and Q signals.

Maiuzzo et al. US 6,549,560 teaches frequency hopping system filtering its received signal through plurality of paths through bandpass filters.

Bruckert US 5,325,394 teaches a spread spectrum receiver comprising plurality of adders and multiplier and a combiner for signal reception.

Harrison US 5,323,391 teaches a multi-channel frequency hopping system filtering its received signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

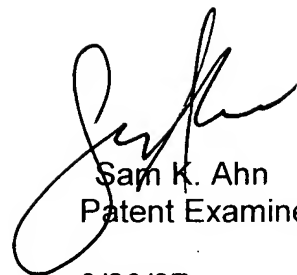
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Sam K. Ahn', is positioned above the printed name and title.

Sam K. Ahn
Patent Examiner

3/23/07